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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

HUYNH, ANDY

ART UNIT PAPER NUMBER

2818

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/775,890	Applicant(s) SUR ET AL.	
	Examiner Andy Huynh	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-29 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☒ Claim(s) 8-24 is/are allowed.
 6) ☒ Claim(s) 4-7 and 25-27 is/are rejected.
 7) ☒ Claim(s) 28 and 29 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 04 September 1992 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 02/09/04, 02/28/05.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

DETAILED ACTION

In the Amendment dated 02/28/2005, the specification is amended and claims 1-3 are canceled is acknowledged. Accordingly, claims 4-29 are pending in the application.

Response to Arguments

Applicant's arguments with respect to claims 4-7 and 25-27 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

This office acknowledges receipt of the following items from the applicant: Information Disclosure Statement (IDS) filed on 02/28/2005. The references cited on the PTOL 1449 form have been considered.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 4, 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kajiwara et al. (JP 63287038 hereinafter referred to as “Kajiwara”).

Regarding claims 4-5, Kajiwara discloses in Fig. 1 and the corresponding texts as set forth in the English Abstract, a method comprises:

- forming at least one metal layer 10 on a surface of a die/chip 2;
- mounting the die/chip on a substrate 1;
- applying solder material/low melting point solder 11 to the at least one metal layer;
- positioning a surface of a lid/cap 3 adjacent the solder material; and
- melting the solder material to physically couple the lid/cap to the die/chip.

Regarding claim 7, Kajiwara discloses in Fig. 1 the method further comprises forming at least one metal 9 or organic layer on the surface of the lid/cap prior to positioning the surface of the lid/cap.

Claims 25-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Wood et al. (USP 6,107,122 hereinafter referred to as “Wood”).

Regarding claim 25, Wood discloses in Figs. 5B-5D and the corresponding texts as set forth in column 5, line 60-column 6, line 41, a method comprises:

- forming an adhesion layer of metal 42 on a surface of a die 10; and
- forming a solder-wettable layer 48 on the adhesion layer.

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Regarding claim 26, Wood discloses the adhesion layer comprises material, including one or more alloys, from the group consisting of titanium, chromium, zirconium, nickel, vanadium, and gold (col. 5, lines 62-63).

Regarding claim 27, Wood discloses the solder-wettable layer comprises one of nickel and gold (col. 6, lines 11-12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiwara et al. (JP 63287038 hereinafter referred to as "Kajiwara").

Kajiwara discloses the all claimed limitations except for in mounting the die on the substrate, the substrate comprises organic material having a relatively high thermal coefficient of expansion relative to that of the die. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to form the substrate comprising organic material having a relatively high thermal coefficient of expansion relative to that of the die, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Allowable Subject Matter

Claims 8-24 are allowed.

Claims 28-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations.

Conclusion

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy Huynh, (571) 272-1781. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The Fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the -status of this application or proceeding should be directed to the receptionist whose phone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ah

04/06/05



Andy Huynh

Patent Examiner